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Title	SEROEPIDEMIOLOGICAL STUDIES OF FLAVIVIRUS INFECTION AMONG DOMESTIC ANIMALS IN AND AROUND KARACHI, STATE OF SIND, PAKISTAN
Author(s)	GO, Tatsuya
Citation	Japanese Journal of Veterinary Research, 38(2), 50-50
Issue Date	1990-07-20
Doc URL	https://hdl.handle.net/2115/3197
Type	departmental bulletin paper
File Information	KJ00002377350.pdf



SEROEPIDEMIOLOGICAL STUDIES OF FLAVIVIRUS INFECTION
AMONG DOMESTIC ANIMALS IN AND AROUND KARACHI,
STATE OF SIND, PAKISTAN

Tatsuya Go

*Department of Veterinary Public Health,
Faculty of Veterinary Medicine,
Hokkaido University, Sapporo 060, Japan*

In and around the city of Karachi in the state of Sind, Pakistan, a seroepidemiological survey was performed among domestic animals in order to determine the prevalence of flaviviruses in this area. A total of 371 sera were obtained from seven kinds of domestic animals, including cattle (88), buffaloes (103), sheep (59), goats (88), horses (9), mules (3) and donkeys (21). These sera were tested for hemagglutination inhibition (HI) antibodies to Japanese encephalitis (JE) virus and West Nile (WN) virus. Some of them were also tested for neutralization antibodies.

Of 88 cattle sera, 32 (36.4%) had positive HI antibody titers ($>1:20$) to JE virus, and 48 (54.5%) to WN virus. Of 103 buffalo sera, 65 (63.1%) were positive to JE virus, and 78 (75.7%) to WN virus. In sheep and goats sera, only a few positive reactors were detected for both viruses (less than 5%, for each). Of 9 horse sera, 6 (66.7%) were positive to both viruses. Of 3 mule and 21 donkey sera, 1 (33.3%) and 4 (19.0%), respectively, were positive to both viruses.

Twenty-seven of the HI-positive sera from cattle, buffaloes, horses, mules and donkeys were tested for neutralizing antibody to JE virus and WN virus. Of the 27 sera, 6 (22.2%) had a positive antibody titer ($>1:16$) to WN virus only, and 12 (44.4%) were positive to both viruses. The other 9 sera (33.3%) were negative to both viruses. No JE-specific antisera were detected in these animals.

These results confirm the existence of WN virus in and around Karachi. However, JE virus seemed not to be prevalent among domestic animals in the area.